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From the Author

THE
ORIGIN
OF THE
VACCINE INOCULATION.

By EDWARD JENNER, M.D. F.R.S. &c.

London:

PRINTED BY D. N. SHURY, BERWICK STREET, SOHO.

1801.

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MAY 18 1884

BY EDWARD

NOTES

PRINTED BY H. N. CHURCH, BROADWAY STREET, LONDON.

1884

I AM induced to give the following concise History of the Origin of Vaccine Inoculation, from my frequently observing that those who only consider the subject cursorily, confound the casual Cow Pox with the Disease when excited by Inoculation.

EDWARD JENNER.

Bond-street,
May 6, 1801.

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MY inquiry into the nature of the Cow Pox commenced up-
 wards of twenty-five years ago. My attention to this singular
 disease was first excited by observing, that among those whom
 in the country I was frequently called upon to inoculate, many
 resisted every effort to give them the Small Pox. These patients
 I found had undergone a disease they called the Cow Pox, con-
 tracted by milking Cows affected with a peculiar eruption on
 their teats. On inquiry, it appeared that it had been known

among the dairies time immemorial, and that a vague opinion prevailed that it was a preventive of the Small Pox. This opinion I found was, comparatively, new among them; for all the older farmers declared they had no such idea in their early days—a circumstance that seemed easily to be accounted for, from my knowing that the common people were very rarely inoculated for the Small Pox, till that practice was rendered general by the improved method introduced by the Suttons: so that the working people in the dairies were seldom put to the test of the preventive powers of the Cow Pox.

In the course of the investigation of this subject, which, like all others of a complex and intricate nature, presented many difficulties, I found that some of those *who seemed to have undergone the Cow Pox*, nevertheless, on inoculation with the Small Pox, felt its influence just the same as if no disease had been communicated to them by the Cow. This occurrence led me to inquire among the medical practitioners in the country around me, who all agreed in this sentiment, that the Cow Pox was not to be relied upon as a certain preventive of the Small Pox.

Pox. This for a while damped, but did not extinguish, my ardour; for as I proceeded, I had the satisfaction to learn that the Cow was subject to some varieties of spontaneous eruptions upon her teats; that they were all capable of communicating sores to the hands of the milkers; and that whatever sore was derived from the animal, was called in the dairy the Cow Pox. Thus I surmounted a great obstacle, and, in consequence, was led to form a distinction between these diseases, one of which only I have denominated the *true*, the others the *spurious*, Cow Pox, as they possess no specific power over the constitution. This impediment to my progress was not long removed, before another, of far greater magnitude in its appearances, started up. There were not wanting instances to prove, that when the true Cow Pox broke out among the cattle at a dairy, a person who had milked an infected animal, and had thereby apparently gone through the disease in common with others, was liable to receive the Small Pox afterwards. This, like the former obstacle, gave a painful check to my fond and aspiring hopes: but reflecting that the operations of Nature are generally uniform, and that it was not probable the human constitution (having undergone the

Cow

Cow Pox) should in some instances be perfectly shielded from the Small Pox, and in many others remain unprotected, I resumed my labours with redoubled ardour. The result was fortunate; for I now discovered that the Virus of Cow Pox was liable to undergo progressive changes, from the same causes precisely as that of Small Pox; and that when it was applied to the human skin in its degenerated state, it would produce the ulcerative effects in as great a degree as when it was not decomposed, and sometimes far greater; but having lost *its specific properties*, it was incapable of producing that change upon the human frame which is requisite to render it unsusceptible of the variolous contagion: so that it became evident a person might milk a cow one day, and having caught the disease, be for ever secure; while another person, milking the same Cow the next day, might feel the influence of the Virus in such a way, as to produce a fore or fores, and in consequence of this might experience an indisposition to a considerable extent; yet, as has been observed, the specific quality being lost, the constitution would receive no peculiar impresson.

Here

Here the close analogy between the Virus of Small Pox and of Cow Pox becomes remarkably conspicuous; since the former, when taken from a recent pustule, and immediately used, gives the perfect Small Pox to the person on whom it is inoculated: but when taken in a far advanced stage of the disease, or when (although taken early) previously to its insertion, it be exposed to such agents as, according to the established laws of Nature, cause its decomposition, it can no longer be relied on as effectual. This observation will fully explain the source of those errors which have been committed by many inoculators of the Cow Pox. Conceiving the whole process to be so extremely simple, as not to admit of a mistake, they have been heedless about the state of the Vaccine Virus; and finding it limpid, as part of it will be, even in an advanced stage of the pustule, when the greater portion has been converted into a scab, they have felt an improper confidence, and sometimes mistaken a spurious pustule, which the Vaccine fluid in this state is capable of exciting, for that which possesses the perfect character.

During the investigation of the casual Cow Pox, I was
struck

struck with the idea that it might be practicable to propagate the disease by inoculation, after the manner of the Small Pox, first from the Cow, and finally from one human being to another. I anxiously waited some time for an opportunity of putting this theory to the test. At length the period arrived. The first experiment was made upon a lad of the name of Phipps, in whose arm a little Vaccine Virus was inserted, taken from the hand of a young woman who had been accidentally infected by a cow. Notwithstanding the resemblance which the pustule, thus excited on the boy's arm, bore to variolous inoculation, yet as the indisposition attending it was barely perceptible, I could scarcely persuade myself the patient was secure from the Small Pox. However, on his being inoculated some months afterwards, it proved that he was secure*. This Case inspired me with confidence; and as soon as I could again furnish myself with Virus from the Cow, I made an arrangement for a series of inocula-

* This boy was inoculated nearly at the expiration of five years afterwards with variolous matter, but no other effect was produced beyond a local inflammation around the punctured part upon the arm,

tions.

tions. A number of children were inoculated in fucceffion, one from the other; and after feveral months had elapsed, they were expofed to the infection of the Small Pox; fome by Inoculation, others by variolous effluvia, and fome in both ways; but they all refifted it. The refult of thefe trials gradually led me into a wider field of experiment, which I went over not only with great attention, but with painful follicitude. This became univerfally known through a Treatife published in June 1798. The refult of my further experience was alfo brought forward in fubfequent publications in the two fucceeding years, 1799 and 1800. The diftruff and fcepticifm which naturally arofe in the minds of medical men, on my firft announcing fo unexpected a difcovery, has now nearly difappeared. Many hundreds of them, from actual experience, have given their attettations that the inoculated Cow Pox proves a perfect fecurity againft the Small Pox; and I fhall probably be within compafs if I fay, thoufands are ready to follow their example; for the fcope that this inoculation has now taken is immense. An hundred thoufand perfons, upon the fmalleft computation, have been inoculated in thefe realms. The numbers who have partaken of its
benefits

benefits throughout Europe and other parts of the Globe are incalculable: and it now becomes too manifest to admit of controversy, that the annihilation of the Small Pox, the most dreadful scourge of the human species, must be the final result of this practice.

